THE VERSATILITY OF GRAND-FORMAT PRINTERS

What a grand-format printer can do for you and your shop

BY GUY CIPRESSO

Guy Cipresso is vice president of sales and business development for Novus Imaging Inc.

ARE YOU CHALLENGED with how to offer more value to your customers? Are you having difficulty with on-time deliveries during periods of peak demand? Is the growth of your business limited by your technology, causing you to farm out jobs or lose business? Do you think a grand-format printer is not right for your business? Well, think again. Grand format might be the versatile performer you have been looking for. What defines grand format? Grand format, as generally understood, is a printer with a print width of 96 inches or more.

The versatility of today's grand-format printers—such as the Synergia Hybrid UV—is akin to having a Swiss army knife. (Photo courtesy of Novus Imaging Inc.)

The range of applications is huge and includes interior mall signage. (Photo courtesy of Novus Imaging Inc.)

Technology Advancements

Grand-format printers have traditionally been associated with print applications limited to very large graphics, viewed from a distance. Since the introduction of grand-format printing, technology advancements have enabled grand format to become more versatile due to the variety of substrates they can print on, image quality, image sizes and the numerous applications it offers while maintaining the productivity and low costs synonymous to grand format. Grand format will impress customers with attention getting images and the speed at which they are printed, allowing you to offer a compelling product portfolio, at attractive prices with short lead times leading to more high-margin business opportunities.

But how did grand-format printers become so versatile? Advancements in printheads, ink technology and material handling have transformed grand-format printing into a versatile workflow

You can also use them to create attention-grabbing grand-format backlit displays. (Photo courtesy of Novus Imaging Inc).

Grand format has always been associated with super large imaging at high speeds (Photo courtesy Fujifilm)

Today's grand-format printers can even tackle high-exposure jobs such as outdoor road signs. Grand format hybrids can print super-wide flexible and rigid substrates with very short change-over times. (Photos courtesy of Novus Imaging Inc.)

component that can tackle a plethora of applications in a productive and cost effective manner.

The incorporation of variable ink droplet technology in printheads, the addition of white ink, expanded-gamut ink sets, improved UV cure technology and better latex inks have all helped propel the quality of grand-format images, which today rival those of smaller-format printers.

The growth and maturity of inkjet has shifted customer image quality expectations across the board. Customers no longer judge the image quality of grand-format printers from a distance. They expect photo realistic image quality and sharp text regardless of image size or viewing distance, and grand format delivers that quality at blazing speeds.

More Choices than Ever

Grand-format printers were initially developed for very large scale imaging—primarily billboards and building wraps. The first grand-format printers to enter the market were roll to roll only and used hard-solvent inks. These two factors limited versatility. Today, grand-format ink options now include UV-curable and

latex ink sets; and printer formats include roll-to-roll printers, flatbed printers and flatbed/roll-fed hybrids. This has enabled grand-format printers to expand beyond roll-to-roll jobs to include an array of rigid printable substrates.

Hybrid grand-format printers offer the ultimate in machine utilization, and can result in an attractive return on investment. Hybrid grand-format printing onto corrugated, Coroplast, Plexiglas, metal, wood, ceramic and other materials is now commonplace in addition to flexible substrates.

Large directional and parking lot signage are among the possibilities. (Photo courtesy of Novus Imaging Inc.)

Better Material Handling

In order to print on large rigid substrates at high speeds, material handling had to be improved to ensure accurate movement of the substrate through the print area. Belt technology was improved by incorporating designs that maintain belt alignment mechanically or with vision to eliminate skew.

Corrugated handling options were developed to control bowing and edge defects typical of most corrugated sheets, eliminating print head strikes that previously slowed the transition and acceptance of grand format printers for low- to mid-volume packaging applications. In addition, printhead/carriage heights are often auto adjustable today, with built-in vision assist to allow printing onto thick substrates typically up to two inches thick or thicker, while today's advanced detection techniques virtually eliminate catastrophic head strikes.

Flexible Substrates

These aforementioned improvements also improved printing onto flexible materials as low-temperature LED-based UV-curing systems came online for grand-format printers. This recent development now allows printing onto thinner, more heat-sensitive substrates that were previously difficult to manage in grand format roll applications at high speeds.

Thin substrates used to warp under the heat that conventional UV-cure systems generate in order to cure the ink. Novus Imaging developed spreaders to keep thin materials from wrinkling as they spool off the feed roller which in the past usually let to to head strikes when printing at very high speeds.

By having the versatility to print onto a huge variety of substrates, sizes and display options, grand format adds to the value you can provide to your customers. Versatility in flexible applications for grand format are vast, including but not limited to:

- Billboards
- Building Wraps
- Bus Shelters
- Day / Night Backlits
- Display Graphics
- Exhibition Graphics
- Flags
- Fleet / Vehicle Graphics
- Floor Graphics
- Indoor Signage
- Point-of-Purchase Graphics
- Interior and Exterior Point-of-Sale
- Posters
- Truck Side Curtains
- Wall Graphics
- Window Clings / Graphics

Grand-format applications are prevalent at sporting events, concerts and other events. However, grand format is penetrating applications that are not super-wide such as window graphics, in store point of purchase and interior wall decorations. The ability to print grand-format images from 3.2 up to 5 meters wide is augmented by the ability to print multiple rolls of smaller width. Smaller-width images can be printed simultaneously on each roll and is not limited to printing the same image. Different images can be printed on each roll, which improves shop productivity and reduces lead time to the customer. Set up is quick and easy, often involving just a change in the feed and take up rollers when loading the multiple rolls.

Rigid Substrates

The introduction and maturation of UV cure and latex ink technologies, along with advancements in white ink chemistry were game changers, expanding the application boundaries of grand format printing now and into the future. And when it comes to printing onto rigid substrates, UV-curing flatbeds began to blossom.

Day/night bus shelter displays really show off a grand-format printer's capabilities. (Photo courtesy of Novus Imaging Inc.)

A grand-format printer will have the print speeds needed to meet surge capacity so that delivery dates can be met confidently and customers satisfied.

Printing onto vinyl, and then adhering the vinyl to rigid boards—required in many applications—today is becoming extinct. It is simply too costly, too time consuming and does not produce the quality compared to employing a flatbed to print directly onto rigid substrates.

Grand-format hybrid printers can also print effectively onto rigid substrates. The ones that produce the best quality at the lowest cost and at the highest productivity employ special belts to move the rigid substrates through the printer. In my opinion, printers that use pressure rollers and claim to be hybrids will fall short in quality and performance versus printers employing a belt drive. Grand format versatility in rigid substrate applications is enormous as are the substrates, including but not limited to:

- Foam board
- Coroplast
- Aluminum composite
- Corrugated materials
- Glass
- Ceiling tiles
- Ceramic tiles
- Wood
- PVC sheet
- Art & photo reproduction
- Sheet metal
- ABS plastics
- Polycarbonate
- Acrylic

Fabrics

Soft signage has gained in popularity and although the textiles available for grand format are not as plentiful as dye-sub or direct to textile, they are available. Soft signage tends to have super large graphics that fit grand format perfectly. Most grand-format fabrics are compatible with UV cure printing and produce excellent quality images with colors that pop. White ink enables printing on dark fabrics for awnings, tents and flags. Fabric printing further increases the versatility and opportunities to offer customers additional value with grand format.

Productivity and Surge Capacity

A necessary component of versatility is speed or productivity. It is well-known

that grand-format printers are fast; most grand-format printers on the market today exceed 1,000 square feet per hour in sellable print quality. In this case speed does not kill, it makes money.

Many print service providers report that each month their operations experience a surge in jobs due to several factors—typically seasonal, event, or customer driven. While it might be great to have a printer that meets a level loaded production schedule, a level loaded schedule is not reality. A grand-format printer will have the print speeds needed to meet surge capacity so that delivery dates can be met confidently and customers satisfied.

In order to meet potential surges in the job load, one might think that simply owning several lesser printers will offer the same capacity and versatility of a grand-format printer. But consider machine utilization, color matching, operator training, service and consumables purchasing. These factors are often overlooked since they are "soft costs," but they still impact the bottom line and efficiency of the operation.

Interior decoration on flexible substrates are great, especially when they can be printed without seams. (Photo courtesy of Novus Imaging Inc.)

Summary

There are many printer alternatives out there from which to choose, but just like employees would you rather have one employee that is versatile and can do many operations in the workflow or several that are just capable of doing one thing. Still think grand format is not a fit for your operation? Take a closer look, do the math, and you could be surprised. **SDG**